

REMARKS

At the outset, the Examiner is thanked for the thorough review and consideration of the pending application. The Final Office Action dated September 19, 2007 has been received and its contents carefully reviewed.

By this Amendment, Applicants amend claims 10, 14 and 15. Accordingly, claims 10-16 are currently pending, of which claims 1-9 are withdrawn as the result of an earlier restriction requirement. Reexamination and reconsideration of the pending claims is respectfully requested.

In the Office Action, claims 10-11 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 19 and 23 of copending U.S. Patent Application No. 10/824,585 in view of Hashimoto'920 (U.S. Publication No. 2001/0013920).

Applicants will address this rejection once the present claims are otherwise allowable and consider the filing of a terminal disclaimer.

On page 2 of the Office Action, claims 10-11 are rejected under 35 U.S.C. §103(a) as being unpatentable over Onuma (JP 05-3451160). Claims 10-11 and 14-16 are rejected under 35 U.S.C. §103(a) as being unpatentable over Applicant's Related Art (hereinafter, ARA) in view of Onuma'160. Claim 12 is rejected under 35 U.S.C. §103(a) as being unpatentable over Onuma'160 in view of Hashimoto et al. (U.S. Publication No. 2001/0013920). Claims 12 is rejected under 35 U.S.C. §103(a) as being unpatentable over ARA in view of Onuma'160, and further in view of Hashimoto'920. Claim 13 is rejected under 35 U.S.C. §103(a) as being unpatentable over Onuma'160 in view of Hashimoto et al. (U.S. Publication No. 2003/0083203). Claim 13 is rejected under 35 U.S.C. §103(a) as being unpatentable over ARA in view of Onuma'160, and further in view of Hashimoto'203.

The rejection of claims 10-11 as being unpatentable over Onuma'160 is respectfully traversed and reconsideration is requested.

Claim 10 is allowable over the cited references in that claim 10 recites a combination of elements including, for example, "wherein the height of the aligning substrate is the same as that of the substrate so that the syringe is raised at the set height from the surface of the aligning substrate." Onuma'160 does not teach or suggest at least this feature of the claimed invention.

Onuma'160 discloses that a rod cell is disposed at a side of the substrate and a nozzle is contacted with the rod cell. In Onuma'160, because the rod cell has a height different from that of the substrate, the gap between the nozzle and the substrate should be calculated on the basis of the height of the nozzle from the rod cell and the height of the substrate. Contrary to Onuma'160, in the claimed invention, the height of the aligning substrate is same that of the substrate. Thus, the surface of the aligning substrate is the reference point to gap between the syringe and the substrate. In the claimed invention, that is, the syringe may be positioned above the substrate at the desired gap by ascending merely the syringe in the set distance from the surface of the aligning substrate, not calculating the gap on the basis of the height of the nozzle from the rod cell and the height of the substrate.

Thus, Onuma'160 does not teach or suggest at least "wherein the height of the aligning substrate is the same as that of the substrate so that the syringe is raised at the set height from the surface of the aligning substrate."

Accordingly, applicant respectfully submits that claim 10 and claim 11, which depend from claim 10, are allowable over Onuma'160.

The rejection of claims 10-11 and 14-16 as being unpatentable over ARA in view of Onuma'160 is respectfully traversed and reconsideration is requested.

Claim 10 is allowable over the cited references in that claim 10 recites a combination of elements including, for example, "wherein the height of the aligning substrate is the same as that of the substrate so that the syringe is raised at the set height from the surface of the aligning substrate." None of the cited references, singly or in combination, teaches or suggests at least this feature of the claimed invention.

In rejecting claim 10, the Examiner acknowledges that ARA "does not explicitly teach that the aligning substrate can be attached to a side surface of the table and the table can be moved to position the syringe over the substrate from the aligning substrate to dispense the sealant." See Office Action, lines 18-20 page 3. The Examiner cites Onuma '160 as allegedly teaching "a method of forming a desired gap prior to forming a sealant layer on a LCD substrate. An aligning substrate 6 is used to acquire the desired gap. The nozzle can contact the aligning substrate while the LCD substrate is loaded on the table. Onuma '160 reasonably teaches the use of a fixed aligning substrate that is not required to be loaded/unloaded on the table." See Office

Action, lines 18-22 page 3. As motivation for modifying the teachings of ARA with Onuma, the Examiner states, "It would have been obvious to one of ordinary skill in the art at the time of invention to have provided a fixed aligning substrate in the method of ARA with a reasonable expectation of success Onuma teaches that such a method of aligning is operable in the LCD deposition art. Attaching the aligning substrate to a side surface of the table and moving the table is obvious for substantially the same reason as discussed above."

Applicants respectfully disagrees the Examiner's statement. Onuma'160 merely discloses that the rod cell is disposed side of the substrate and a nozzle is contacted with the rod cell. In Onuma'160, the gap between the nozzle and the substrate can be obtained by calculating the height of the nozzle from the rod cell and the height of the substrate. Contrary to Onuma'160, in the claimed invention, because the height of the aligning substrate is same that of the substrate, the syringe can be position above the substrate at the desired gap by ascending merely the syringe from the surface of the aligning substrate in the set distance, not calculating the gap the height of the nozzle from the rod cell and the height of the substrate.

Thus, Onuma'160 does not teach or suggest at least "wherein the height of the aligning substrate the is same as that of the substrate so that the syringe is raised at the set height from the surface of the aligning substrate."

Accordingly, applicant respectfully submits that claim 10 and claim 11, which depend from claim 10, are allowable over the cited references.

Claim 14 is allowable over the cited references in that claim 10 recites a combination of elements including, for example, "attaching an aligning substrate to at least one side surface of a table;....aligning the plurality of syringes on the basis of the image of the alignment patterns on the aligning substrate through the image camera;... providing a substrate onto the top surface of the table to be adjacent to the aligning substrate, the height of the substrate being the same as that of the aligning substrate." None of the cited references, singly or in combination, teaches or suggests at least this feature of the claimed invention.

In rejecting claim 14, the Examiner stated ARA "teaches that an image camera can be used to detect the alignment patterns on the aligning substrate and the position of the syringes are aligned according to the image [0016]."

Applicants respectfully disagrees the Examiner's statement. ARA merely discloses "To align the syringes 402A-402C, the sealant is applied on the dummy substrate 401 through the nozzles 403A-403C to form a vertically crossing seal pattern, and then an image of the seal pattern is detected with the image cameras 404A-404C provided at the syringes 402A-402C to check the alignment state and the position of the syringes 402A-402C is compensated." That is, ARA does not teach the aligning substrate attached to the substrate on which the sealant is dispensed. In fact, ARA merely discloses the dummy substrate separated from the substrate. Further, Onuma'160 does not teach at least "the height of the substrate being the same as that of the aligning substrate."

Accordingly, applicant respectfully submits that claim 14 is allowable over the cited references.

Claim 15 is allowable over the cited references in that claim 10 recites a combination of elements including, for example, "aligning the plurality of syringes on the basis of the image of the alignment patterns on the aligning substrate by the image camera; and providing a substrate onto the top surface of the table to be adjacent to the aligning substrate, the height of the substrate being same as that of the aligning substrate, the height of the substrate being the same as that of the aligning substrate." None of the cited references, singly or in combination, teaches or suggests at least this feature of the claimed invention.

In the Office Action, the Examiner rejects claim 15 for the same reasons as claim 14. Applicants' arguments with respect to claim 14 are equally applicable to claim 15 and Applicants respectfully submit that claim 15 and claim 16, which depend from claim 15, are allowable over the cited references for the same reasons given for claim 14 above.

The rejection of claim 12 as being unpatentable over Onuma'160 in view of Hashimoto'920 is respectfully traversed and reconsideration is requested. Claim 12 is allowable at least by virtue of the fact that it depends from claim 10, which is allowable.

The rejection of claim 12 as being unpatentable over ARA in view of Onuma'160, and further in view of Hashimoto'920 is respectfully traversed and reconsideration is requested. Claim 12 is allowable at least by virtue of the fact that it depends from claim 10, which is allowable.

The rejection of claim 13 as being unpatentable over Onuma'160 in view of Hashimoto'203 is respectfully traversed and reconsideration is requested. Claim 13 is allowable at least by virtue of the fact that it depends from claim 10, which is allowable.

The rejection of claim 13 as being unpatentable over ARA in view of Onuma'160, and further in view of Hashimoto'203 is respectfully traversed and reconsideration is requested. Claim 13 is allowable at least by virtue of the fact that it depends from claim 10, which is allowable.

Applicants believe the application is in condition for allowance and early, favorable action is respectfully solicited. If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at (202) 496-7500 to discuss the steps necessary for placing the application in condition for allowance. All correspondence should continue to be sent to the below-listed address.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911. A duplicate copy of this sheet is enclosed.

Dated: 18 December 2007

Respectfully submitted,

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